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PATENT SPECIFICATION

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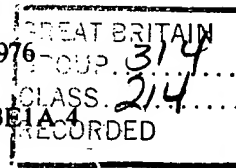
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(54) SIDE LOADER MAST TRAVERSING MECHANISM

(71) We, LANCER BOSS LIMITED, a Company incorporated under the Laws of Great Britain at Grovebury Road, Leighton Buzzard, Bedfordshire, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a traversing mechanism for the mast of a side loader having a chassis including front and rear wheeled body parts interconnected by a backbone structure with a recess extending transversely of the vehicle between the body parts and having mast guide means along the sides of the recess. The invention relates also to side loaders having a mast traverse mechanism of the invention.

The main object of the present invention is to provide an improved mast traversing mechanism for a side loader, and a side loader incorporating such a traversing mechanism.

According to the present invention a traverse mechanism for the mast of a side-loader comprises a shaft freely rotatably mounted transversely of a recess and out of the path of mast travel in the recess, and two mast traverse drive devices one at each side of the recess and each including a roller fast on the shaft and an idler roller freely journaled at the opposite end of the path of mast travel to the shaft, one of said devices having an endless flexible drive member running over its two rollers and fixed to the mast, and the other of said devices having a prime mover, a pair of tied idler rollers mechanically connected together and movable by the prime mover and a flexible drive member connected to the mast and having its ends anchored and passing between its ends in succession over one of the tied rollers, the shaft roller, the freely journaled roller and the other tied roller, whereby operation of the prime mover moves the tied rollers causing rotation of the shaft and movement of the flexible members

to traverse the mast along guides along said recess.

In a preferred construction the mast is supported on trolley or like devices moveable in the guides extending along the recess and each is connected to one of the flexible members.

The prime mover is preferably an hydraulic ram and the idler rollers are rotatably mounted on a member fast with the piston rod of the ram.

In this specification the term "flexible member" is to be understood to include any flexible element such as a chain or cable.

In order that the invention may be more fully understood an embodiment in accordance therewith will now be described by way of example with reference to the accompanying drawings in which:—

Fig. 1 is a diagrammatic section through a side loader showing a mast traverse mechanism;

Fig. 2 is an underside plan view of the mast traverse mechanism of a side loader;

Fig. 3 is an elevation looking from the left in Fig. 2;

Fig. 4 is an elevation looking from the right in Fig. 2; and

Fig. 5 is an elevation looking from the bottom of Fig. 2

In the drawings the same references are used to designate the same or similar parts.

Referring to the drawings, Fig. 1 shows the body 1 of the side loader chassis with the engine or drivers cab indicated at 2. The fork mast 3 with its fork carriage 4 and forks 5 is mounted on mast supporting means shown as a trolley 6 which moves in guides 7 in the central recess across the vehicle in a known manner. A similar mast supporting means is provided at the other side of the recess as seen in Figs. 2 to 5.

A prime mover in the form of an hydraulic ram 8 is fixed to the side loader chassis adjacent the guide 7 at one side of the recess. This ram has a piston rod 9 to which is connected a tied roller support 10. This support 10 may be fast with the rod 9 to

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be moved by the ram back and forth across the side loader or it may move along guides (not shown), adjacent to and substantially parallel with the guide 7.

- 5 The support 10 has two rollers 11 journaled therein, which are normally idler rollers, so that the rollers 11 are mechanically tied together.

- 10 The two idler rollers are in alignment in a vertical phase transversely of the vehicle with a roller 12 on a shaft 20 rotatably mounted with respect to the chassis with its axis of rotation longitudinally of the vehicle at the inner end of the recess in the chassis out of the path of travel of the trolley 6. An idler roller 13 is journaled on the chassis adjacent the outer end of the recess and out of the path of travel of the trolley 6.

- 20 A flexible member shown as a length of chain 14 has one end 15 anchored to the side loader preferably as shown adjacent to the end of the ram while its other end is anchored at 16 to the chassis adjacent the other end of the path of mast travel. Between its anchors 15, 16 the chain passes round the rollers 11, 12 and 13, and at its upper reach is secured to the trolley 6. If desired the chain is broken at the trolley 6 and its broken ends are each secured to the trolley 6.

- 30 While the ram 8 is shown fixed at the inner end of the chassis mast recess, it may be reversed so that it is at the outer end of the recess. To augment the power of the ram one or more of the rollers may be driven as by electric motors or hydraulic motors.

- 35 It will be seen that by operating the ram or other driving device or motor the support 10 is made to traverse the side loader so that the chain moves round all the rollers and causes the trolley 6 to traverse the side loader in the guide 7.

- 40 Referring to Figs. 2 to 5 these show the mast traversing mechanism showing the arrangement of the drive to both mast trolleys one at each side of the recess. The mechanism at the left of Fig. 2 is similar to that in Fig. 1 except that the ram 8 rod 9, support 10 and idler rollers 11 are shown above the mast trolley 6.

- 50 The roller 12 is fast in rotation on one end portion of the shaft 20 which extends between the front and rear body portions, but it must be disposed so as not to interfere with the movement of the mast and the fork carriage on the mast.

- 55 A roller 22 is fast in rotation with the right hand end of the shaft 20 in Figs. 4 and 5 and in alignment therewith a freely rotatable roller 23 is rotatably mounted on the chassis.

A second flexible member 24 runs round the rollers 22, 23 and is anchored at 25 to the second mast trolley 26.

Thus the chain 14 causes rotation of the roller 12 and hence the shaft 20 so that actuation of the ram 8 causes the mast trolleys to move in unison along the recess.

All the rollers are preferably sprocket wheels when each flexible member is a chain, but it may be a cable or the like.

WHAT WE CLAIM IS:—

1. A traverse mechanism for the mast of a sideloader comprising a shaft freely rotatably mounted transversely of a recess and out of the path of mast travel in the recess, and two mast traverse drive devices one at each side of the recess and each including a roller fast on the shaft and an idler roller freely journaled at the opposite end of the path of mast travel to the shaft, one of said devices having an endless flexible drive member running over its two rollers and fixed to the mast, and the other of said devices having a prime mover, a pair of tied idler rollers mechanically connected together and movable by the prime mover and a flexible drive member connected to the mast and having its ends anchored and passing between its ends in succession over one of the tied rollers, the shaft roller, the freely journaled roller and the other tied roller, whereby operation of the prime mover moves the tied rollers causing rotation of the shaft and movement of the flexible members to traverse the mast along guides along said recess.

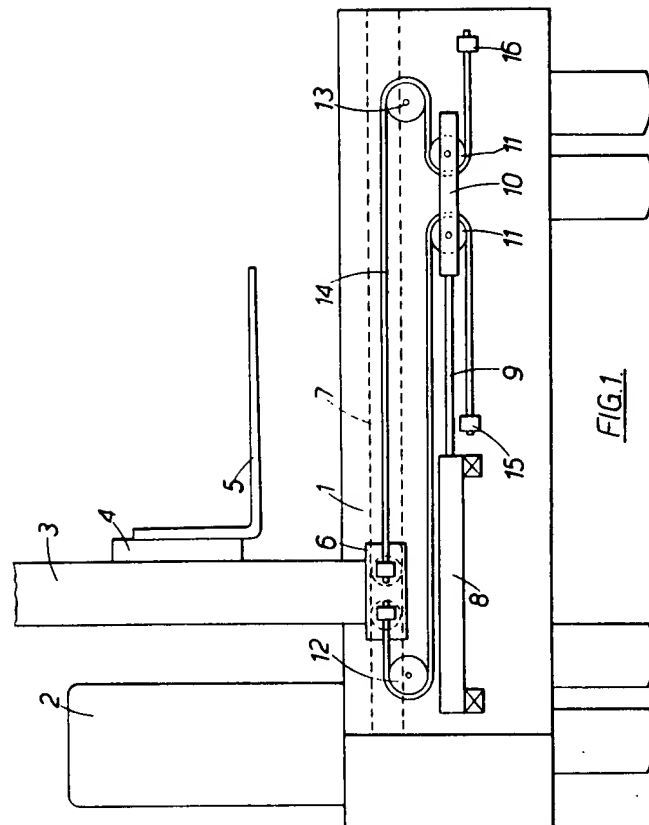
2. A traverse mechanism according to Claim 1 wherein the mast is supported on trolley devices one at each side of the recess and moveable in the guides along the recess and each is connected to one of the flexible members.

3. A traverse mechanism according to Claim 1 or 2 wherein the prime mover is an hydraulic ram and the idler rollers are rotatably mounted on a member fast with the piston rod of the ram.

4. A traverse mechanism for the mast of a sideloader substantially as herein described with reference to Figs. 1 or Figs. 1 to 5 of the accompanying drawings.

5. A sideloader provided with a mast traverse mechanism substantially as herein described with reference to Fig. 1 or Figs. 1 to 5 of the accompanying drawings.

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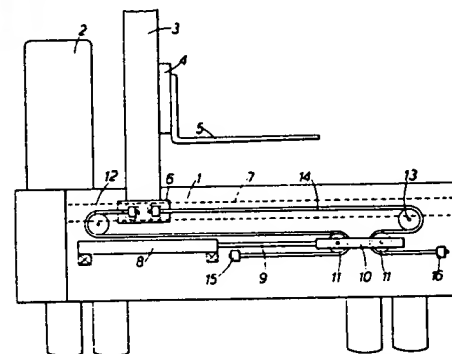
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Side loader truck mast traversing mechanism - using ram to move
coupling rollers which train flexible drive member

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The side-loader truck has a mast (3) which may be laterally traversed into and out of a recess provided between forward and rear body parts. The traversing mechanism at one side of the mast (3) comprises an operating ram (8) whose piston-rod (9) is connected to idler rollers (11) rigidly coupled by a tie (10). A drive chain (14) has respective ends (15, 16) anchored to the chassis and passes, from each



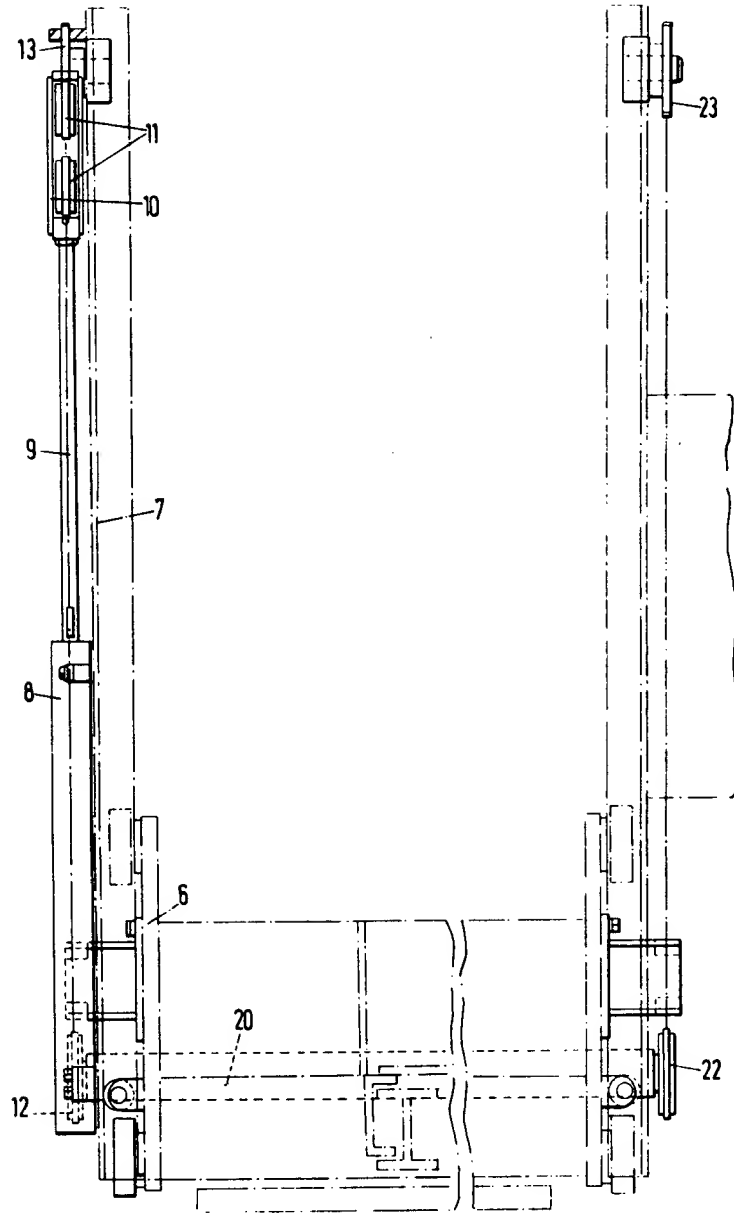
such anchorage, over respective ones of the idler rollers (11) and further rollers (12, 13) to connecting points on the mast trolley (6). At the opposite side of the mast (3), an endless chain, connected to the trolley (6) passes over a pair of rollers one of which is on a rotary shaft common with the first (12), of the further rollers (12, 13). 13.6.73 (6pp).

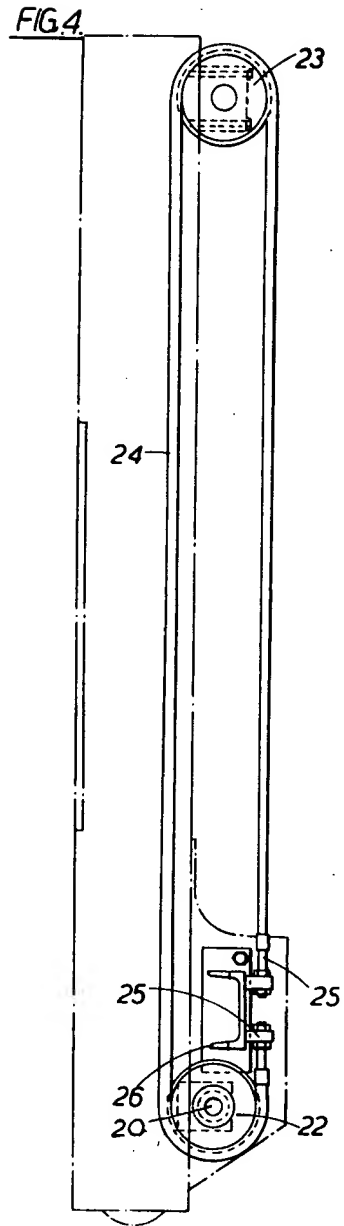
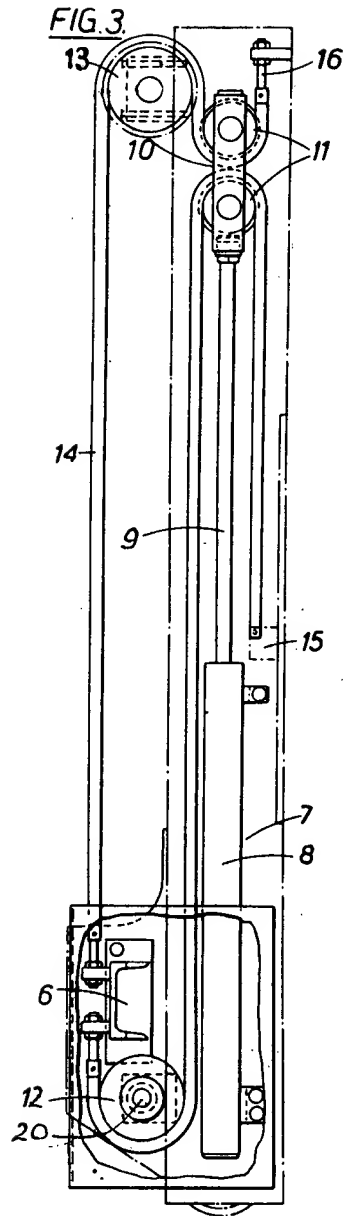
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Sheet 2





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